

Alterasi Akibat Proses Hidrotermal di Daerah Kulon Progo dan Sekitarnya, Daerah Istimewa Yogyakarta

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Abstract

Study area is located at between Kabupaten Kulon Progo, Special Region of Yogyakarta Province and Kabupaten Purworejo distincti, Central Java Province, with geography coordinates of 110°00'00" BT - 110°15'02" BT and 7°35'00" LS - 7°50'30" LS. This area has 1024 km² (32 km x 32 km) wide.

The volcanic rocks in Kulon Progo were formed during Oligocene-Miocene time and have undergone alteration since that time. They mostly form the Old Andesite Formation, which consists of interbedded volcanic breccia, tuff, andesite, dacite and diorite. They are part of the magmatic Sunda-Banda Arc.

These volcanic rocks have chemical compositions that range from basalt andesite to dacite and from low potassium series to calc-alkaline series. Phenocrysts consist of pyroxene, hornblende, plagioclase, alkali feldspars and quartz.

The rocks have under gone hydrothermal alteration and based on mineral alteration assemblages, they can be divided into three alteration zones. These zones are : 1) A phyllic zone that is characterized by quartz-sericite-chlorite, 2) A propylitic zone that is characterized by chlorite-epidote-calcite, 3) An argillic zone characterized by illite-kaolinite-montmorillonite.

Keywords : alteration, phyllic, heat sources, propylitic, argillic

Abstrak

Daerah penelitian secara administrasi terletak di Kabupaten Kulon Progo, Propinsi Daerah Istimewa Yogyakarta dan Kabupaten Purworejo, Propinsi Jawa Tengah. Secara geografis daerah penelitian berada pada 110°00'00" BT - 110°15'02" BT dan 7°35'00" LS - 7°50'30" LS, dengan luas 32 x 32 km².

Geologi daerah penelitian didominasi oleh batuan vulkanik berumur antara Oligosen-Miosen. Batuan vulkanik tersebut termasuk dalam Formasi Andesit tua yang terdiri dari breksi vulkanik, tuff, andesit, dasit dan diorite. Selain itu batuan vulkanik juga termasuk dalam Busur magmatic Sunda-Banda.

Batuan vulkanik ini mempunyai komposisi kimia antara andesit basaltik sampai dasit dan termasuk seri batuan kalk alkali. Fenokris batuan terdiri dari piroksen, hornblende, plagioklas, felspar alkali dan kuarsa.

Batuan vulkanik yang terubah akibat proses hidrotermal di daerah kulon progo dapat dibagi menjadi 3 (tiga) zona alterasi, yaitu ; 1. Zona alterasi Filik yang karakteristiknya muncul mineral ubahan kuarsa-serisit-klorit, 2)Zona alterasi Propylitik dicirikan munculnya mineral ubahan klorit-epidot-kalsit dan Zona alterasi Argillik dicirikan dengan munculnya mineral ubahan illit-kaolin-montmorilonit.

Kata kunci : alterasi, filik, sumber panas, propilitik, argillik